**Demonstrate the use of index(),append(),insert(),extend(),and remove() methods on list data type.**

**Code**

def display\_menu():

print("\nChoose an operation:")

print("1. Find index of a number")

print("2. Append a number to the list")

print("3. Insert a number at a specific index")

print("4. Extend the list with multiple numbers")

print("5. Remove a number from the list")

print("6. Display the current list")

print("0. Exit")

def main():

numbers = [10, 20, 30, 40, 50] # Initial list

print("Original list of numbers")

print(numbers)

while True:

display\_menu()

choice = input("Enter your choice (0-6): ")

if choice == '1':

# Find index of a number

try:

num\_to\_find = int(input("Enter a number to find its index: "))

index = numbers.index(num\_to\_find)

print(f"The index of {num\_to\_find} is: {index}")

except ValueError:

print("Number not found in the list.")

elif choice == '2':

# Append a number

new\_number = int(input("Enter a number to append to the list: "))

numbers.append(new\_number)

print("List after appending:", numbers)

elif choice == '3':

# Insert a number at a specific index

insert\_index = int(input("Enter the index to insert a number (0 to {}): ".format(len(numbers))))

insert\_number = int(input("Enter a number to insert: "))

if 0 <= insert\_index <= len(numbers):

numbers.insert(insert\_index, insert\_number)

print("List after inserting:", numbers)

else:

print("Invalid index.")

elif choice == '4':

# Extend the list with multiple numbers

additional\_numbers = list(map(int, input("Enter numbers to extend the list, separated by spaces: ").split()))

numbers.extend(additional\_numbers)

print("List after extending:", numbers)

elif choice == '5':

# Remove a number

try:

num\_to\_remove = int(input("Enter a number to remove from the list: "))

numbers.remove(num\_to\_remove)

print("List after removing:", numbers)

except ValueError:

print("Number not found in the list.")

elif choice == '6':

# Display the current list

print("Current list:", numbers)

elif choice == '0':

# Exit the program

print("Exiting the program.")

break

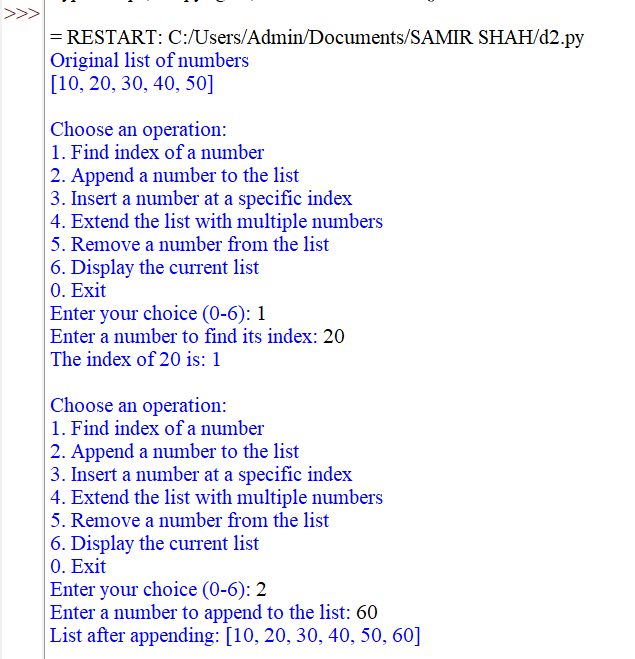
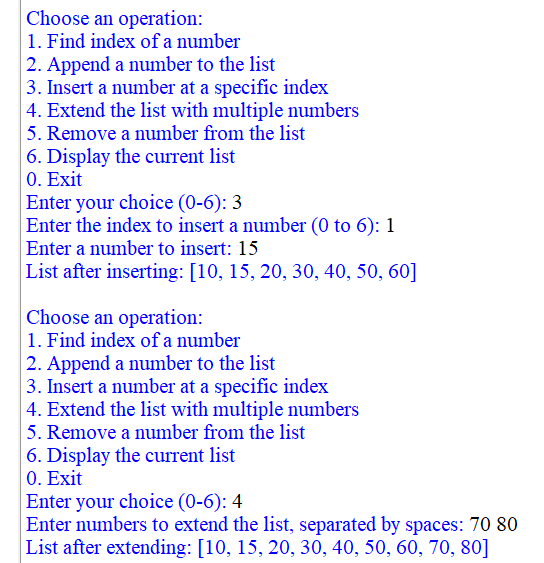
else:

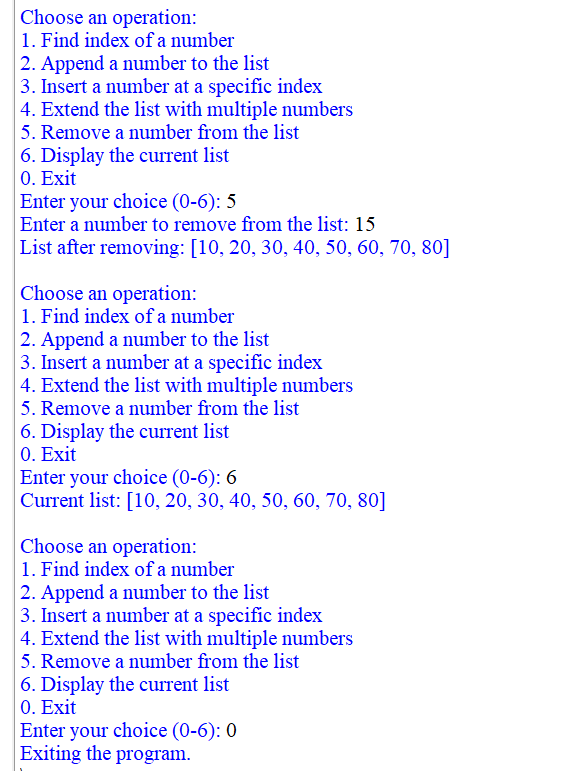
print("Invalid choice. Please select a valid option.")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**OUTPUT:-**

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